Clogging the machinery: the BBC's experiment in science coordination, 1949–1953

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Abstract

In 1949, physicist Mark Oliphant criticised the BBC's handling of science in a letter to the Director General William Haley. It initiated a chain of events which led to the experimental appointment of a science advisor, Henry Dale, to improve the 'coordination' of science broadcasts. The experiment failed, but the episode revealed conflicting views of the BBC's responsibility toward science held by scientists and BBC staff. For the scientists, science had special status, both as knowledge and as an activity, which in their view obligated the BBC to make special arrangements for it. BBC staff however had their own professional procedures which they were unwilling to abandon.

The events unfolded within a few years of the end of World War 2, when social attitudes to science had been coloured by the recent conflict, and when the BBC itself was under scrutiny from the William Beveridge's Committee. The BBC was also embarking on new initiatives, notably the revival of adult education. These contextual factors bear on the story, which is about the relationship between a public service broadcaster and the external constituencies it relies on, but must appear to remain independent from. The article therefore extends earlier studies showing how external bodies have attempted to manipulate the inner workings of the BBC to their own advantage (e.g those by Doctor and Karpf) by looking at the little-researched area of science broadcasting. The article is largely based on unpublished archive documents.

Introduction

The distinguished BBC producer Grace Wyndham Goldie has recounted how, in late 1945 or early 1946, she began planning a new radio series, *The Challenge of Our Time*. In the aftermath of a convulsive world war, the times called for serious analysis – which the series would attempt. She asked a range of British intellectuals what issues should be tackled in the series (Goldie 11). To her surprise, instead of the

miscellany of proposals she expected, one dominated: ‘the lack of synthesis in modern thinking, and in particular the wide gulf between the scientific and the humanistic approach to life’(Goldie 12). *The Challenge of Our Time* was broadcast in spring 1946, and featured philosophers, scientists, historians, divines and others. Science was a recurring theme, with high-profile left-wing scientists J. D. Bernal, J. B. S. Haldane and C. H. Waddington speaking of science’s role in creating a rational and fairer society, and other speakers – including the chemist Michael Polanyi – taking more sceptical line. (Goldie 25–30, 41–50, 56–61). Listening figures were between three and five million – high for serious talks – and by popular demand the series was published as a book (Goldie 13–14).

It is not difficult to see why ‘science and society’ touched a nerve at this time. The Second World War was widely understood to have been a scientific war, in which science had been instrumental in overcoming a foe frequently portrayed as irrational and anti-scientific. Yet the closing days of the war had seen the devastating first uses of atomic bombs. The problematic standing of science after the war led some ‘public’ scientists to temper their former whole hearted advocacy of science. Physiologist Henry Dale, for example, who at a scientific conference in 1943 had spoken of science’s central place in modern life (Dale Science and the Citizen 285–6), had, by 1950, adopted a more nuanced view. Now, according to Dale, writing in a BBC publication, science must be everyone’s concern because of its potential for ‘catastrophic misuse’ (Science and Broadcasting 137). Dale plays a major part in the events narrated below.

The above story not only serves as background to this article, which concerns a debate about science broadcasting in the UK in late 1940s and early 1950s, but also shows how historians of broadcasting might find in science broadcasting a useful window on to wider cultural and social issues. For science has in general formed a significant part of BBC output – despite scientists’ perpetual complaints about its paucity in broadcasting. (An example of scientists’ underestimation of the extent of science broadcasting occurs in the following narrative.)

Although the BBC has not neglected science, historians and commentators on broadcasting have. The standard histories by Asa Briggs, Burton Paulu, and Paddy Scannell and David Cardiff have, at most, odd sentences or paragraphs alluding to science, and no specialist monograph has appeared on the subject. Similarly, the considerable body of book-length memoirs published by former BBC staff has virtually nothing to say about science.[1] Away from the field of media history, however, sociological studies of science in all the media have proliferated in recent decades, especially in relation to the sociological work done by science popularisation

to project not just science, but a particularly favourable view of science and scientists.[2]

There are, however, a couple of honourable exceptions to the neglect of a historical view of science broadcasting. Marcel LaFollette's two historical studies *Science on the Air* and *Science on American Television* provide a useful insight into the American experience. In the British context, Timothy Boon's *Films of Fact*, though mainly concerned with cinematic science documentary film, briefly covers some of the incidents that are examined at greater length in this article (187–91). Two of my own publications on science broadcasting bear somewhat on the present article and are cited at appropriate points.

A letter to the Director General

In May 1949, William Haley, Director General of the BBC, received a letter from the physicist Professor Mark Oliphant. It presented a charge sheet of complaints against BBC science broadcasts, and a remedy:

> What I should like to see is some break-away from the perpetual theme of 'science and society', with the inevitable excursion of the scientist into fields of politics where he does not shine, towards an attempt to present science as natural philosophy, as a way of life and a culture in its own right. I believe it can be done. I don't think scientists should always appear as Utopian idealists, as Marxists, or as amateur politicians. Cannot we sometimes forget war and atomic weapons, industrial advance or productivity, medicine and food production or science and religion, and say something more of the history and growth of science, of the great revolution wrought by the introduction of the experimental method, of the intellectual satisfaction and fun of science, and of the scope and content of modern science, all regarded as contributions to knowledge rather than as awe-inspiring or useful facts?[3]

The references to 'science and society' broadcasts and to left-wing polemics in Oliphant's letter alluded to broadcasts by politically radical scientists,[4] and quite possibly to Goldie's series *The Challenge of Our Time*.

Haley took the letter seriously. Oliphant was a respected figure. Australian by birth (and shortly to return to Australia), he had lived in the UK since 1927. During the war, he had worked on the separation of uranium isotopes as part of the atomic bomb projects in the UK and USA. At the time of his letter, Oliphant was a member of the BBC's General Advisory Council, a non-executive body largely comprising eminent

figures from public life. The Council had been reconstituted in 1947, following wartime abeyance, with a more diverse membership, and now included seven scientifically trained members in its complement of 49 (Boon 187).

An expanded version of Oliphant's letter was presented to a meeting of the General Advisory Council where it was warmly supported by civil servant Sir John Anderson and physicist Sir Lawrence Bragg.[5] A working group chaired by Anderson and informally referred to as the 'Anderson Committee' was set up to pursue Oliphant's proposals. It included Oliphant, Bragg, physiologist A. V. Hill, civil servant Sir Alan Barlow, and, among the BBC representatives, George Barnes (Director of the Spoken Word).

Oliphant presented a set of suggestions for new types of science programme to a meeting of the committee in August 1949. His suggestions came under six headings:

1 The history, aims and methods of science.

2 British advancement in science.

3 A series of discussions between 'men of distinction', who could debate controversial scientific questions.

4 A weekly 'newsletter' on science directed to scientists and technologists.

5 A series of programmes on 'How it works'.

6 Recent advances in science.

Under each heading, Oliphant suggested some programme ideas. For example, under 'British advancement in science' came proposals on Newton, Boyle, Faraday, Maxwell, Rutherford, and other figures from the physical and biological sciences.[6] This new kind of material, Oliphant judged, would require the appointment of two scientists as senior BBC managers to oversee production: one an expert on the physical sciences, the other a biology specialist.[7]

The same meeting that received Oliphant's proposals was presented with a list of four months'-worth of recent BBC science broadcasts. It came as a revelation. Lawrence Bragg was surprised by the extent of current science broadcasting, and pointed out that 'many of the suggestions contained in Professor Oliphant's memorandum were in fact in operation.'[8] Indeed, Oliphant's 'new' types of programme were already well represented. For example, recent broadcasts on *New Calculating Machines* (i.e. computers), *Continuous Creation* (with Fred Hoyle), *Mesons*, *Supersonic Planes*, and many more, fitted Oliphant's category of 'recent advances in science'. These

broadcasts, furthermore, had been produced without the two senior scientist-managers Oliphant deemed essential.

With the collapse of its *raison d'être*, the committee might have been expected to dissolve itself. Instead it turned its attention in a new direction, unconnected with anything Oliphant had proposed: the 'coordination' of science broadcasts. The outcome was the experimental appointment for two years of Sir Henry Dale as a 'science advisor'. However, before looking at this experiment – later characterised by BBC staff member Mary Somerville as 'a somewhat unhappy page in BBC history'[9] – it is necessary to make a detour into the work of the BBC educationalist Joseph Trenaman.

Joseph Trenaman's experiments on comprehension

During 1949, as the Anderson Committee deliberated on science broadcasts, the BBC's Further Education Department conducted experiments into listeners' comprehension of a number of broadcasts, including three on science (Trenaman Understanding). The findings of one of these experiments were circulated in October 1949 in an internal BBC report.[10]

The leading light behind this research was Further Education Officer Joseph Trenaman. Born on 25 September 1910, he joined the BBC in 1929 as a shorthand typist. In 1930 he moved to the weekly BBC publication *The Listener*, handling its advertisements, and remained there until his call-up for wartime military service. During the Second World War he trained 'delinquent' soldiers, and by the war's end he was teaching on an army education scheme in East Africa. Following the war, now fired with enthusiasm for adult education, Trenaman found the prospect of returning to his pre-war job unappealing,[11] and in December 1945 re-joined the BBC in Listener Research. By1949 he was a BBC Further Education Officer – a post he held until 1959, when he left the BBC to found the Television Research Unit at Leeds University. In 1961 he published his most celebrated work, *Television and the Political Image*, co-written with Denis MacQuail. He died in December 1961, but a book based on his researches, *Communication and Comprehension*, appeared posthumously in 1967. [12]

The intention behind Trenaman's research at the time of the Anderson Committee was to improve the effectiveness of further educational broadcasts, and, in the case of science broadcasts, to shed some light on the efficacy of spoken science presentation.[13] Further education had been a major plank of pre-war BBC broadcasting policy, when it had been strongly oriented towards 'group listening'. This policy, though, was regarded as a failure by the time of the events covered in this

article, and an attempt was under way to revive further education through the creation of a new department, and through Trenaman's investigations of listeners' comprehension. Advocacy of this new approach to further education became part of the BBC's evidence in 1949 to the Broadcasting Committee, chaired by William Beveridge.[14]

In the first of Trenaman's science-broadcast experiments in 1949, a recording of a 15-minute talk on electrons was played to 264 listeners of mixed educational qualifications gathered in a studio.[15] Immediately after the programme, listeners wrote down everything they could recollect, and their answers were marked against a list of thirty-three 'teaching points' distilled from lists of teaching points prepared independently by three 'education officials' (Trenaman Understanding 174). Listeners' scores were taken to indicate comprehension.

The results of the experiment were presented in Figure 1. The horizontal axis shows categories of listener according to their highest educational attainment. Scores in each category were averaged, hence the label on the vertical axis 'Average group score'. The graph line, rising from left to right, shows that students with high educational attainments understood the talk better on average than students with low educational attainments. A score of 15 was set as the limit of understanding, and groups whose average score was below 15 were considered not to have understood the talk. This threshold of 15 marks was determined by giving identical sets of 20 marked scripts to each of five science teachers. The scripts covered the range of marks from low to high, but the marks were hidden. The science teachers were asked sort them into five grades, the top being 'a sufficient understanding of the whole of the talk,' and the bottom 'little or no understanding of the important points of the talk.' The middle grade, 'a sufficient understanding of only a few of the important points,' was taken as the threshold, and found to correspond to a mark of 15. In other experiments the threshold corresponded to a different mark (Trenaman Understanding 175**)**.

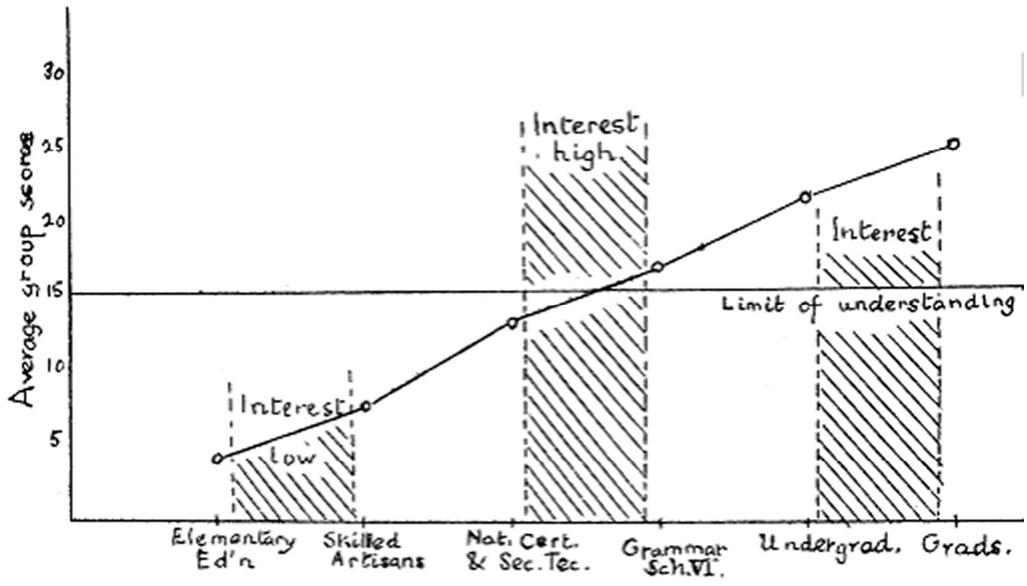

Figure 1 Comprehension levels for and educational attainments for subjects in Trenaman's test of listeners' understanding of a science broadcast (Source: *Listeners' Understanding of a Broadcast Talk on Science*, October 1949)

The surprising result of the experiment, however, was not the findings on comprehension, but on interest. Discussions between listeners and experimentalists revealed that listeners' interest in the broadcast was not correlated with their comprehension. Three distinct levels of interest were found, broadly associated with educational attainment. These interest levels are shown as hatched columns in Figure 1. The greatest interest (middle column) coincided with subjects whose average score was on the limit of understanding – as shown by the intersection of the graph line with the score of 15 (the 'Limit of Understanding').

One of the report's conclusions was that 'the needs of the general public call for spoken word broadcasts in science at three levels of difficulty.' This finding was the most influential part of the report of the experiment. The three levels were felt to correspond approximately to the typical educational attainments of audiences for the three domestic radio channels of the BBC: the Third Programme, Home Service and Light Programme.

Coordination

For much of its history, the BBC has had no Science department. Subject-specific production departments have generally not existed, except for Music and Religion. At the time of the events described here, radio broadcasts on most topics, including science, could emerge principally from three departments:

Talks Department (in Talks Division)

Schools Department (in Talks Division)

Features Department (in Entertainment Division)[16]

Members of the Anderson Committee felt that this spread of departmental responsibility for science was a dispersal of talent, and led to haphazard programming.[17] This issue was referred to as a lack of coordination. As this idea was being discussed within the Committee, a copy of Trenaman's report arrived, with its suggestion that talks should be planned to fit the 'three interests' model. This observation fed into the Anderson Committee's report, which appeared towards the end of November 1949. It congratulated the BBC on the 'impressive volume' of its scientific broadcasting, saying that 7.5% of the time available for Talks was devoted to science.[18] However, it doubted whether there was adequate coordination of science broadcasts to ensure that they had their 'maximum impact on the interest and understanding of listeners at their various levels of knowledge and intelligence' – a reference to Trenaman's experimental findings.[19] The report recommended the experimental appointment of a scientific advisor, whose role would be to improve coordination, as well as to explore programme ideas, investigate new methods of production, and to explore the new potentials offered by television.

The BBC's Board of Governors accepted the report's major recommendation, and set about finding a suitable advisor. However, there were dissenters. One manager (name unrecorded) did not see lack of coordination as a problem:

> I do not see how, under the present constitution, there could ever be any adequate machinery for ensuring complete co-ordination of the Corporation's science output. The best we can hope for is that those who are guiding its policy and working out details at least keep in touch with each other so that they know what their other colleagues in this field are doing. I hope I am not being pessimistic in refusing to be distressed by this thought. The range of science today is so vast in relation to the maximum time the Corporation can conceivably devote to it that any really comprehensive scheme seems impossible.

This manager considered that a scientific advisor would not help but hinder – in a way that gives the present article its title:

> So far as I can see our relations with the scientists are at the moment excellent and I can only see such an appointment as is envisaged here as clogging the machinery.[20]

The acceptance of the Anderson Committee's recommendations by BBC Governors is ironic. In December 1943, six years before the Anderson Committee's report, a delegation from the British Association for the Advancement of Science had met William Haley, then Editor-in-Chief, to argue for the creation of a committee of scientists to put forward programme ideas, and for a high level science programme officer to, in effect, coordinate science output.[21] A couple of months later, in February 1944, a delegation from the Association of Scientific Workers made almost identical proposals. Both sets of proposals received a chilly response from Haley because they threatened to interfere with BBC practices and responsibilities. They progressed no further.[22] I shall return to the striking difference between Haley's response to the 1943–4 interventions and Oliphant's 1949 intervention at the end of this article.

The Henry Dale experiment and report

The experimental 'science adviser' appointed by the BBC was the physiologist and pharmacologist Sir Henry Dale (1875–1968). Dale's long research career had focused on chemical mediators in the human body, and included the discovery of histamine. In 1914 he became a Fellow of the Royal Society, for which he served as Secretary (1925–35) and President (1940–45). He received numerous prizes, including the Nobel prize (1907), was honoured with a Knighthood and an Order of Merit, and was made a Commander of the Order of the British Empire.[23] He was also an occasional broadcaster on the BBC.

Dale's appointment lasted for two years, from 1 July 1950 to 30 June 1952. Early in his appointment, in autumn 1950, he published an article in a BBC publication (Dale Science and Broadcasting) in which he stressed the importance of science, both as a deliverer of material benefits and as a way of thinking. He stressed the dangers of the abuse of knowledge, and the current threats to humanity: annihilation, over-population, starvation, and exhaustion of raw materials. Science was thus everybody's concern, and broadcasting had a vital role in fostering an enlightened interest in science. Dale acknowledged that listeners' taste for science had limits, but he suspected the limits had not been seriously tested, pointing out that in his youth very few people had been interested in 'serious' music, but the promotion of music at popular concerts had created a large audience for it. He suggested something similar might be possible with science.

If Dale had hoped that his appointment would allow him to implement some of these ideas, he was to be disappointed. In his report, issued in early 1953, he found that working with BBC producers had been highly enjoyable, and was happy to pay tribute to them; but his role had been frustrating.[24] He had been given no office or secretarial support, and had difficulty discovering plans for forthcoming broadcasts. His natural

point of contact within the BBC was Archibald Clow, the principal science producer in the Talks Department. However Clow was already overloaded with work, and Dale could see that his own need for assistance imposed an additional burden on Clow. After about a year, help was found for Clow, which freed some of his time. Dale drew on it with an easier conscience, but did not regard this a satisfactory solution either for Clow or himself. Dale's lack of facilities was at odds with earlier assurances from George Barnes that '... the responsible Controllers could be relied upon to give [an advisor] adequate scope and effective collaboration.'[25]

As far as his coordinating function was concerned, all Dale could do was arrange periodic interdepartmental meetings between producers. Each participant was required to let Dale know beforehand of current and future projects. The participants said the meetings were useful for exchanging information among themselves, but Dale reported that no collaboration between producers in different departments followed. Producers sought Dale's opinion on scripts, but always so late in production that very little emendation was possible. However, Dale approved of the way television was shaping up, and found that he could operate more effectively here than in radio.

It is hard to see Dale's report as anything other than an indication of bad faith on the BBC's part. Mary Somerville, Director of Talks at the time of Dale's report, wrote:

> I cannot but regard the circumstances of [Dale's] appointment and our subsequent treatment of him as a somewhat unhappy page in BBC history.

In particular, she considered that the Anderson Committee's recommendation was incompatible with BBC practice, and infringed producers' responsibilities:

> Although the BBC accepted the recommendation of the Anderson Committee to appoint a Scientific Adviser I do not think they ever subscribed to the assumptions underlying that recommendation i.e. that it is desirable in principle to co-ordinate BBC output, or approaches to scientists, or that it is necessary for any check to be placed upon producers' choice of speakers by 'establishing high-level contact with scientists on the requisite footing of informality'.[26]

Somerville considered that any future Scientific Advisor would have to accept BBC practice rather than change it:

> My main recommendation is that if we do appoint another Scientific Adviser his terms of reference should be framed to fit the facts of the situation inside the BBC. Thus the first question seems to me to be – Is a

> policy of coordinating programmes and approaches now to be adopted or not?[27]

No further Scientific Advisor was appointed, and uncoordinated, de-centralised production continued as before. The episode, though, had a rhetorical usefulness for BBC staff. In a public talk in 1966, Aubrey Singer, Head of Outside Broadcasts, Feature and Science Programmes, Television (and originator of the television science series *Horizon*) rather dubiously claimed (Singer 12):

> Previous experience in this field [science broadcasting] had taught us that co-ordination ... did not really work and indeed actively discouraged the interest of production departments.

Discussion

In this section I want to examine and contextualise some of the more striking (and strange) features of the story narrated above.

As has already been mentioned, similar calls on the BBC to coordinate science broadcasts were made in 1943–4, and soundly rebuffed. Between 1958 and 1961, scientists again (and rather more ill-temperedly) called for science broadcasts to be coordinated, and again were rebuffed, although this time the BBC was asked to resolve the issue by the Pilkington Committee. A compromise was adopted – the establishment of the Science Consultative Group, an advisory committee of scientists which had no executive powers (Jones Élite). In all these interventions scientists argued for science to be privileged because (as scientists claimed) it was intrinsically important in modern life and for the country's economy. In the scientists' view, this obligated the BBC to elevate science in its output, and to give the scientific world greater say in its programming. What is distinctive about the 1949 interventions described here, relative to the earlier and later ones, is that they were received sympathetically by Director General. Possibly timing had a lot to do with this. The 1949 interventions happened when the BBC was under scrutiny by the Broadcasting Committee chaired by William Beveridge, which took an interest in all aspects of the BBC's work including that of its advisory bodies.[28] Haley might therefore have been accommodating towards the General Advisory Council for diplomatic reasons. However, I suggest a different explanation, which is not incompatible with the one just given. The 1949 interventions could be seen as being partly initiated within the BBC, in the sense that external members sat on the General Advisory Council by invitation from the BBC.[29] In 1943–4 and 1958–61, by contrast, the initiatives came from bodies outside the BBC, principally from the British Association for the

Advancement of Science and the Royal Society, and could be construed as institutional threats to the BBC's autonomy.

The story told here shows that Oliphant and the other members of the General Advisory Council, and later the Anderson Committee, had a superficial, and even prejudiced, view of the nature of the BBC's science broadcasts. They erroneously considered the broadcasts to be dominated by instrumental, and politically motivated, portrayals of science, and argued for a view of science as culture, and deserving consideration alongside other cultural practices. The historian Roy Porter has commented on a post-war propensity among scientists to prefer a 'cultural' framing of science: 'In the post-Hiroshima twilight when science had lost its innocence, this [cultural interpretation of science] could be comforting news' (36). Much of Oliphant's war-time work had been connected with the development of atomic weapons, and much of his post-war career with peaceful uses of nuclear power, so his intervention has the hallmarks of the phenomenon identified by Porter.

Joe Trenaman's experimental results were seized on both by scientists and BBC staff members, and it is worth exploring the extent to which Trenaman's methods and results played to the presuppositions of each group. Trenaman's approach had the appearance and trappings of science. It assumed that comprehension was quantifiable, and that laboratory-like conditions enabled it to be isolated and measured. In his book *Communication and Comprehension*, Trenaman almost fetishised his experimental procedure, as though to establish its scientific merit (14–15):

> For the sound broadcasts the studio seating was arranged so that each member was usually sitting about two feet from his neighbour. The viewing theatres, where the television versions were seen, were smaller, with tip-up seats in fixed positions, and it was not possible to separate participants to the same extent.
>
> Each respondent was asked to complete three lots of questionnaires stapled in three separate booklets of contrasting colours.
>
> During the playback of the recordings the lights were dimmed for the sound broadcasts and were switched right off for the telerecordings in the hope that members would be less conscious of the presence of the others in the group. They were asked to try to imagine that they were at home.

This 'scientific' approach could be expected to have appealed to scientists, and it is telling that scientific members of the Anderson Committee were 'interested and impressed' by the results of Trenaman's experiment.[30]

For the broadcasters, Trenaman's conclusion that listeners could be aggregated into three groups on the basis of their academic qualifications provided a 'scientific' rationale for what was already a standard way of stratifying audiences. In 1938, for example, a senior talks assistant wrote in a memorandum that listeners fell into categories: A, B and C. Group A were the 'intelligent and well informed'. Group B were 'intelligent and not so well informed.' Group C, the largest, included the 'not so intelligent and mostly uninformed' who, because of their 'extreme simplicity' would only listen to 'adventure' or 'personality' talks'.[31] In 1943, Mary Somerville also split listeners into three groups:

> 1 Well informed people who would be interested to hear of new research work [...]
>
> 2 Less well educated people who already have the capacity for taking an interest in some science ... without having the training to satisfy their own interest.
>
> 3 The uninformed and uneducated man (and woman) in the street who are to be found in all classes of the community and who retard social progress in all departments of life when co-operation depends on the acceptance of scientific principles.[32]

And Haley himself thought of the public as a three-layer pyramid for which '... we would have a Light Programme which would cover the lower third of the pyramid. We would have a Home Service which would take more than the middle third, take everything up to the tip. And then we'd have a Third Programme. [...]' [33] However, Robert Silvey, a long-term member of BBC staff who pioneered audience research, had a less crude view of audience stratification, for which just as much empirical justification could be claimed as for Trenaman's view. According to Silvey (124–5), 'highbrow' listeners were distinguished from others by the fact that they listened to, and appreciated, all kinds of material, not simply the kind their educational and cultural backgrounds were thought to predispose them to.

Following the Anderson Committee's 'discovery' that science broadcasts were not as Oliphant had claimed, but were already in the style of his 'new' type of broadcast, it is striking how the Committee's concerns swung round to 'coordination', drawing on the timely appearance of Trenaman's experimental findings. In the mid-to-late 1940s, coordination of output had been a subject of considerable debate and policy shifts within the BBC. In 1945, with a new Third Programme still at the planning stage, a policy of decentralised programme planning was introduced by Haley. The three radio networks were expected to compete with each other, so far as this was possible

without compromising their essential characters (Briggs Sound 69–74). This policy brought benefits, but by 1948 was judged too problematic to be allowed to continue. It was rescinded by Haley, who announced that 'constructive and creative planning' was to take the place of competition within and between radio services. The services were to be 'co-ordinated to the fullest possible extent in the listeners' general interest.'[34]

The Anderson Committee's interest in 'coordination' was therefore consonant with the recent policy shift towards coordinated production. However, for broadcasters and scientists 'coordination' turned out to mean different things. As Briggs explains, for the broadcasters coordination was related to the efficient use of resources in pursuit of the BBC's cultural mission (Sound 74). For the scientists, coordination meant the efficient use of resources (under the management of a scientist) for the promotion of science. It represented a transfer of responsibility away from BBC staff and towards scientists, and directly challenged the professional competence of production staff. This is not to say that Henry Dale actually aspired to controlling science broadcasts during his experimental appointment; but there was potential for BBC production staff to lose autonomy, and for managerial lines of responsibility to become confused, if the experiment resulted in a permanent post. Against this background, it is no surprise that the experiment was 'a somewhat unhappy page in BBC history'.

Conclusion

Earlier in this article I mentioned the comparative neglect of science in historical studies of broadcasting. This article suggests that a potentially productive way to approach the topic is via the relationship between the BBC and the world of 'élite science' (such as the Royal Society and other influential, high prestige bodies). Within both of these domains there was a somewhat paternalistic orientation towards the public. That is, in both there was a tendency to see the public as needing guidance towards what was beneficial. For the scientists, this meant promoting a particular view of science and its importance to the public, and the transfer to scientists of a greater degree of control over science broadcasting. For the BBC it meant promoting knowledge of a wide range of cultural activities, including science, and the retention of control by the BBC as the guardians of public service broadcasting. In both cases we see a concern with remoulding public tastes on a large scale, which naturally opens possibilities for both cooperation and conflict. In the present case, the cooperation between the BBC and its advisors led to conflict when the possibility of external control and disruption to existing BBC practices became apparent to BBC staff.

Acknowledgement

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Notes

In the following notes, WAC indicates the BBC Written Archives Centre at Caversham, Reading, UK.

[1] Bridson (319) pays compliment to BBC radio science producers Archie Clow, David Edge and Mick Rhodes. Lambert (75) speaks highly of the work of 1930s science producer Mary Adams. Other memoirs by Eckersley (Power), Eckersley (BBC), Gorham, Grisewood, Hibberd, Maine, Reith, and Silvey say nothing about science broadcasting.

[2] See for example, Gregory and Miller, and Sismondo.

[3] WAC R6/34, letter from Mark Oliphant to W. J. Haley, 16 May 1949.

[4] For more on broadcasts in the 1930s by left wing scientists, see Jones (Mary Adams).

[5] WAC R6/34, minutes of General Advisory Council meeting, 2 June 1949.

[6] WAC R6/34 undated Memorandum 'A Suggested Series of Programs [sic] on Science' by M. L. E. Oliphant.

[7] WAC R6/34 undated Memorandum 'A Suggested Series of Programs [sic] on Science' by M. L. E. Oliphant.

[8] WAC R6/34 Minutes of Anderson Committee meeting, 16 August 1949.

[9] WAC R6/186, Memo 26th January 1953 from Controller talks (Home Sound) [Mary Somerville] to DSW [Director of Spoken word, Harman Grisewood].

[10] WAC R6/34, report *Listeners' Understanding of a Broadcast Talk on Science*, October 1949.

[11] WAC L1/901/1 Internal BBC memo, 2 January 1945, Record of Interview with J. Trenaman.

[12] Most of this biographical information about Trenaman is from WAC L1/901/1, Trenaman's BBC personnel file, supplemented with information from his obituary in *The Times* (9 January 1962, p.13) and from the foreword to Trenaman (Communication).

[13] WAC R6/34, report *Listeners' Understanding of a Broadcast Talk on Science*, October 1949, p.2.

[14] WAC R15/152, G41.52 'Further Education Policy', 15 May 1952.

[15] The talk was by the physicist Nevill Mott, and entitled 'What are we Doing with Electrons?', broadcast on Tuesday 19 July 1949 at 21.15 (reprinted in *The Listener*, 28 July 1949, pp. 153–4). The figure of 264 listeners comes from WAC R99/6/1, J. Trenaman, *Understanding of Broadcasts on Science*, paper read to the meeting of the British Association for the Advancement of Science (Section J), 5 September 1950.

[16] WAC R6/34, George Barnes, memo to Special subcommittee to consider Broadcasts on Science, 4 July 1949

[17] WAC R6/34, Special subcommittee to consider Broadcasts on Science, Minutes of a meeting on 16 August 1949.

[18] WAC GAC148 Report of the Special Sub-committee to consider broadcasts in science, 23 November 1949.

[19] WAC GAC148 Report of the Special Sub-committee to consider broadcasts in science, 23 November 1949, p. 1.

[20] WAC R6/34, memo 19 Dec 1949 to CHS [Controller Home Service, R. E. L. Wellington] from unnamed.

[21] WAC R51/529 Notes of meeting at Broadcasting House, 14 December 1943.

[22] WAC R51/529, memo 24 November 1943.

[23] Biographical information from Feldberg 2004.

[24] WAC R6/186 Report to the BBC Governors by Sir Henry Dale, 13 January 1953.

[25] WAC R6/34, minutes of a meeting on 17 October 1949.

[26] WAC R6/186, memo from Mary Somerville to Director of Spoken Word, 26th January 1953.

[27] WAC R6/186, memo from Mary Somerville to Director of Spoken Word, 26th January 1953.

[28] Briggs (Sound 298); Report of the Broadcasting Committee, 1949, recommendation 55 (p. 196) recommended that the BBC increase the number of its advisory councils.

[29] In the context of advisory councils and committees, Paulu (Television 140) writes of the National Councils for Wales, Scotland and Northern Ireland, for which members are selected 'not directly by the BBC, as are all other council and committee members....'

[30] WAC R6/34 Minutes of a meeting on 7 November 1949.

[31] Quoted by Cardiff (35).

[32] WAC R51/523/3, memo from Mary Somerville to Director of Talks 3 March 1942.

[33] BBC Oral History P, Sir William Haley interviewed by Frank Gillard, quoted by Carpenter (9).

[34] Haley, 'Home Programme Policy' 15 March 1948, quoted by Briggs (Sound 74).

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